AMENDMENTS TO THE CLAIMS

1-2. (Cancel)

3. (Previously Presented) A method of introducing a nucleic acid into cells by electroporation, comprising
the step (a) of providing an electrode with a cationic surface;
the step (b) of adsorbing and loading a nucleic acid onto the cationic surface of an electrode;
the step (c) of allowing cells to adhere onto the surface of the nucleic acid-loaded electrode obtained in the step (b); and
the step (d) of applying electric pulses to the cells, wherein the electrode with a cationic surface is an electrode on which a monolayer of a thiol, disulfide or sulfide compound having an anionic functional group at the terminal is formed and a cationic polymer is adsorbed onto the surface of the monolayer.

4. (Previously Presented) A method of introducing a nucleic acid into cells by electroporation, comprising
the step (a) of providing an electrode with a cationic surface;
the step (b) of adsorbing and loading a nucleic acid onto the cationic surface of an electrode;
the step (c) of allowing cells to adhere onto the surface of the nucleic acid-loaded electrode obtained in the step (b); and
the step (d) of applying electric pulses to the cells, wherein the electrode with a cationic surface is an electrode on which a monolayer of a thiol, disulfide or sulfide compound having a cationic functional group at the terminal or a silanising agent having a cationic functional group at the terminal is formed, an anionic polymer is adsorbed onto the surface of the monolayer and a cationic polymer is further adsorbed onto its surface.

5. (Previously Presented) A method of introducing a nucleic acid into cells by electroporation, comprising
the step (a) of providing an electrode with a cationic surface;
the step (b) of adsorbing and loading a nucleic acid onto the cationic surface of an electrode;

the step (c) of allowing cells to adhere onto the surface of the nucleic acid-loaded electrode obtained in the step (b); and

the step (d) of applying electric pulses to the cells, wherein the electrode with a cationic surface is a transparent electrode on which a cationic polymer is adsorbed.

6-9. (Cancelled)

10. (Original) The method according to claim 5, wherein the transparent electrode is a glass or a transparent plastic substrate on which indium-tin oxide, indium oxide, aluminum-doped zinc oxide or antimony-doped tin oxide is deposited.

11. (Original) The method according to claim 5, wherein the transparent electrode is a glass substrate or a transparent plastic substrate on which indium-tin oxide is deposited.

12. (Previously Presented) The method according to claim 3, wherein the electrode with a cationic surface is an electrode on which the monolayer of a thiol compound having an anionic functional group at the terminal is formed and a cationic polymer is adsorbed onto the surface of the monolayer, and the thiol compound having an anionic functional group at its terminal is a thiol compound indicated by the formula (1):

$$R^1(CH_2)_n\text{-}SH \quad (1)$$

wherein R^1 represents an anionic functional group and n represents an integer of 1 to 40.

13. (Previously Presented) The method according to claim 12, wherein R^1 is a group selected from the group consisting of a carboxyl group, a phosphate group, a sulfo group and a phosphonic acid group.

14. (Previously Presented) The method according to claim 12, wherein the thiol compound represented by the formula (1) is a mercaptoalkanoic acid selected from 11-mercaptoundecanoic acid, 8-mercaptooctanoic acid and 15-mercaptohexadecanoic acid.

15. (Previously Presented) The method according to claim 3, wherein the cationic polymer is a polymer selected from a polyethyleneimine, polyallylamine, polyvinylamine, polyvinylpyridine, aminoacetalized poly(vinyl alcohol), acrylic or methacrylic polymer having primary to quaternary amine at the terminal of the side chain, acid-treated gelatin, protamine, polylysine, polyornithine, polyarginine, chitosan, DEAE-cellulose, DEAE-dextran and polyamidoamine dendrimer.

16. (Previously Presented) The method according to claim 4, wherein the electrode with a cationic surface is an electrode on which a monolayer of a thiol compound having a cationic functional group at the terminal is formed, an anionic polymer is adsorbed onto the surface of the monolayer and a cationic polymer is further adsorbed onto its surface, and the thiol compound having a cationic functional group at the terminal is a thiol compound represented by the formula (2):

$$R^2(CH_2)_n\text{-}SH \quad (2)$$

wherein R^2 represents a cationic functional group and n represents an integer of 1 to 40.

17. (Previously Presented) The method according to claim 16, wherein R^2 is an amino group.

18-19. (Cancelled)

20. (Currently Amended) A method of introducing a nucleic acid into cells by electroporation, comprising

the step (A) of adsorbing and loading a nucleic acid onto the surface of an electrode;

the step (B) of allowing cells to adhere onto the surface of the obtained nucleic acid-loaded electrode; and

the step (C) of applying electric pulses to the adhering cells, wherein the step (B) is carried out by incubating cells on the nucleic acid-loaded electrode.

21. (Previously Presented) A method of introducing a nucleic acid into cells by electroporation, comprising

the step (a) of providing an electrode with a cationic surface;

the step (b) of adsorbing and loading a nucleic acid onto the cationic surface of an electrode;

the step (c) of allowing cells to adhere onto the surface of the nucleic acid-loaded electrode obtained in the step (b); and

the step (d) of applying electric pulses to the cells, wherein the step (c) is carried out by incubating cells on the surface of the nucleic acid-loaded electrode.

22. (Cancelled)

23. (Cancelled)

24. (Currently Amended) A method of introducing a nucleic acid into cells by electroporation, comprising

the step (a) of providing an electrode with a cationic surface;

the step (b) of adsorbing and loading a nucleic acid onto the cationic surface of an electrode;

the step (c) of allowing cells to adhere onto the surface of the nucleic acid-loaded electrode obtained in the step (b); and

the step (d) of applying electric pulses to the cells, wherein an electrode with the cationic surface ~~electrode~~ is an electrode having a micropatterned surface.

25. (Previously Presented) An electrode with a cationic surface wherein a monolayer of a thiol, disulfide or sulfide compound having an anionic functional group at the terminal is formed and a cationic polymer is adsorbed onto the surface of the monolayer.

26. (Previously Presented) An electrode with a cationic surface wherein a monolayer of a thiol compound represented by the formula (1):

$R^1(CH_2)_n$-SH (1)

, wherein R1 represents an anionic functional group and n represents an integer of 1 to 40,

is formed on the surface of a gold electrode substrate prepared by depositing gold onto a glass substrate and a cationic polymer is adsorbed onto the surface of the monolayer.

27. (New) The method according to claim 21, wherein the electrode with a cationic surface is an electrode on which a monolayer of a thiol, disulfide or sulfide compound having an anionic functional group at the terminal is formed and a cationic polymer is adsorbed onto the surface of the monolayer.

28. (New) The method according to claim 21, wherein the electrode with a cationic surface is an electrode on which a monolayer of a thiol, disulfide or sulfide compound having an cationic functional group at the terminal or a silanising agent having a cationic functional group at the terminal is formed, an anionic polymer is adsorbed onto the surface of the monolayer and a cationic polymer is further adsorbed onto its surface.

29. (New) The method according to claim 21, wherein the electrode with a cationic surface is a transparent electrode on which a cationic polymer is adsorbed.

30. (New) The method according to claim 24, wherein the electrode with a cationic surface is an electrode on which a monolayer of a thiol, disulfide or sulfide compound having an anionic functional group at the terminal is formed and a cationic polymer is adsorbed onto the surface of the monolayer.

31. (New) The method according to claim 24, wherein the electrode with a cationic surface is an electrode on which a monolayer of a thiol, disulfide or sulfide compound having an cationic functional group at the terminal or a silanising agent having a cationic functional group at the terminal is formed, an anionic polymer is adsorbed onto the surface of the monolayer and a cationic polymer is further adsorbed onto its surface.

32. (New) The method according to claim 24, wherein the electrode with a cationic surface is a transparent electrode on which a cationic polymer is adsorbed.